



Case Study

IPSTAR Rural Telephony

The Telephone Organization of Thailand (TOT) and IPSTAR Join Forces to Link Rural Communities to the World

Universal Service Obligation (USO) providers play an important role in ensuring that telephony is accessible to all residents, especially to the remote community. However, USO projects oftentimes require huge investment for providing and interconnecting isolated areas with rural telephony. Capital expense is significantly higher for constructing terrestrial lines in rural areas with low population density, highly scattered settlements and difficult terrains. For many USO providers, cost is perhaps the most important contributing factor to the pending deployment of telephone service to rural and remote areas.

Despite Thailand's advances in digital technology to increase the availability of telecommunication infrastructures throughout the country, over 30 million people living in the rural area have no access to basic telephone service.

As the primary USO provider in Thailand, TOT has been implementing a rural connectivity project since 2006 – combining cost-effective network technology with IPSTAR satellite backhaul to provide rural telephony service for the remote communities in the country. A satellite platform, like IPSTAR, is the simplest, most economical solution to quickly implement a

telecommunication backbone and to link rural communities to the world.

For many remote communities, no other telecommunication technology matches the IPSTAR rural telephony solution. IPSTAR connects far-flung areas through rural telephony with the rest of the world, contributing towards the long-term development of people living in the rural area and providing viable connectivity. This rural telephony project is intended to be replicated into other underserved communities in Asia-Pacific.

Benefits

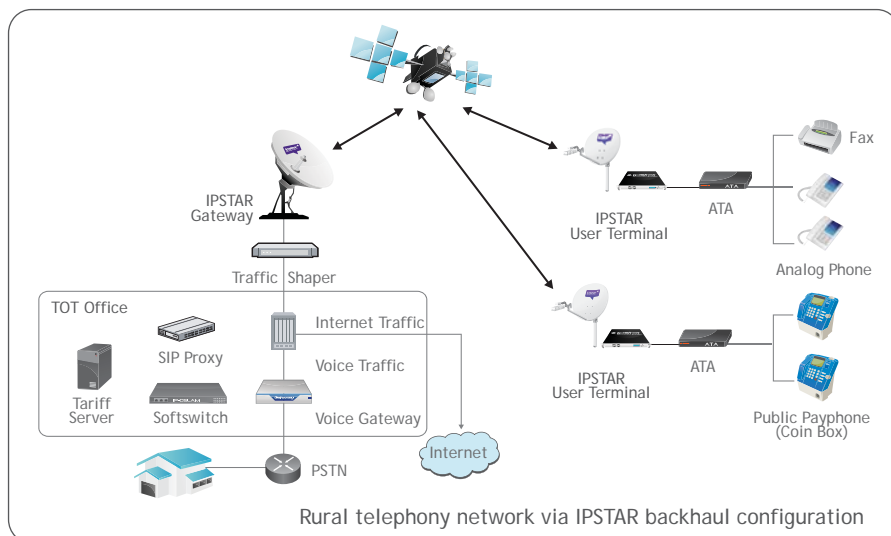
- The combination of the IPSTAR satellite backhaul and rural telephony supports a sustainable business model for rural communities with no access to telecommunication infrastructures.
- With flexible and rapid deployment, IPSTAR rural telephony is a cost-effective solution in providing reliable, high-quality voice service for remote communities that cannot be reached by terrestrial lines.
- By using an Analog Telephone Adapter (ATA), a single IPSTAR connection can be shared among multiple users.

Challenge

- Provide remote communities in Thailand access to information and economic opportunities through rural telephony
- Implement a cost-effective rural telephony model that can overcome distance and terrain barriers, and can provide the highest voice quality
- Create an effective rural telephony model that can be deployed into other underserved communities in Asia-Pacific

Solution

- Deploy rural telephony with IPSTAR satellite backhaul – a cost-effective last-mile solution that links remote communities, regardless of distance and terrain barriers



The Situation

Thailand has a rural population scattered throughout vast, mountainous and heavily forested lands with few telecommunication infrastructure in place in those areas. About 70 percent, or 45 million of its population live in the rural area, where most communities subsist through agriculture. People living in remote communities are often isolated due to the lack of telephony service – contributing towards the widening digital divide gap between the urban and rural areas.

Rural areas are usually characterized by low population densities, highly scattered settlements and difficult terrains. In most cases, it is not viable to rollout terrestrial infrastructure due to the high installation cost of copper wire. A Wireless Local Loop (WLL) that uses microwave radio transmission is also not suitable for very harsh terrain or locations that are 20 kilometers away from the nearest Public Switched Telephone Network (PSTN) office.

The Solution

The TOT is the country's incumbent telecommunication service provider. While it is active in all areas of telephony and data communications, one of TOT's major goals is to provide rural telephony to the country's remote areas. The TOT has partnered with IPSTAR in implementing its USO project to reach

and interconnect isolated areas with rural telephony – helping bridge the digital divide between urban and rural areas in the country.

Rural telephony via IPSTAR provides a financially viable solution and business opportunity for service providers in connecting isolated communities to modern telecommunications. The operational expense is lower with IPSTAR because using a satellite backhaul has less chances of network failure – ensuring higher system availability and lower maintenance cost. IPSTAR is reliable in providing telecommunication access to rural areas characterized by low population densities, highly scattered settlements and difficult terrains.

Proof-of-Concept

The TOT's rural connectivity project in Thailand is a major milestone in the deployment of rural telephony via the IPSTAR satellite backhaul. IPSTAR plays a major role in the rapid deployment of telephones to far-flung areas, which would otherwise not be economically viable. In addition, the satellite platform helps in reducing the capital expense of the project to one-fifth, a critical factor in the implementation of a sustainable business model.

As of 2010, about 2,000 IPSTAR user

terminals are deployed for the TOT's USO project, providing remote communities with more than 7,000 phone lines – either for pay phone, fixed line or fax machine. The rural telephony rollout brought voice service to millions of village residents, small businesses, health centers and schools across Thailand – most of them for the first time.

The TOT's rural telephony project provides every remote community with high-quality, affordable telecommunication service, regardless of distance and terrain barriers. Through its successful implementation in Thailand, TOT has successfully demonstrated a viable business model that can be deployed across Thailand, as well as in other countries facing the same challenge.

About IPSTAR

THAICOM-4 (IPSTAR) is the world's largest and most advanced commercial satellite serving up to 10 million users in Asia-Pacific. The breadth of the satellite's geographical reach in the region – covering an area inhabited by 4 billion people or roughly 60 percent of the world's population – positions IPSTAR as the preferred gateway in 14 countries across Asia-Pacific. IPSTAR has achieved a critical milestone in its pursuit to bridge the digital divide in the region. With a combined 100,000 subscribers in Australia and New Zealand alone and still growing, IPSTAR has become the single largest VSAT network operator in both countries. Across the region, IPSTAR has sold nearly a quarter of a million user terminals.

For more information, visit www.ipstar.com.

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